


## Safety Data Sheet

### CARBOSTEM - Reg. No: L 7859 (Act No 36 of 1947)

1) PRODUCT AND COMPANY IDENTIFICATION	
Product name:	CARBOSTEM
Other means of identification:	Carbosulfan 480 g/L EC
Chemical Name:	2,3-dihydro-2,2-dimethyl-7-benzofuranyl[(dibutylamino)thio]methylcarbamate
UN number:	2991
Recommended use:	Insecticide
Restrictions on use:	Agriculture
Distributed by:	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 www.agritech.co.za
Emergency Number:	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 TYGERBERG: 021 931 6129 RED CROSS: 021 689 5227 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
2) HAZARDS IDENTIFICATION	
Classification of the substance/mixture:	Acute Toxicity (Oral) Category 3 Acute Toxicity (Dermal) Category 4 Acute Toxicity (Inhalation) Category 2 Skin Irritation Category 3 Eye Damage Category 1 Skin Sensitization Category 1 STOT SE Category 3 Aspiration hazard Category 1 Aquatic Acute Category 1 Aquatic Chronic Category 1
Label Elements: Globally Harmonized System, EU (GHS):	<p>Pictograms:</p>  <p>Signal word: Danger</p> <p><b>Hazard Statements:</b>  <b>H226:</b> Flammable liquid and vapour.  <b>H301:</b> Toxic if swallowed.  <b>H304:</b> May be fatal if swallowed and enters airways.  <b>H312:</b> Harmful in contact with skin.  <b>H315:</b> Causes skin irritation.</p>

According to Directive 67/548/EEC No. 1272/2008 [CLP]

**H317:** May cause an allergic skin reaction.  
**H318:** Causes serious eye damage.  
**H330:** Fatal if inhaled.  
**H335:** May cause respiratory irritation.  
**H336:** May cause drowsiness or dizziness.  
**H400:** Very toxic to aquatic life.  
**H410:** Very toxic to aquatic life with long-lasting effects.  
**H411:** Toxic to aquatic life with long-lasting effects.  
**Precautionary Statements:**  
**P201:** Obtain special instructions before use.  
**P202:** Do not handle until all safety precautions have been read and understood.  
**P260:** Do not breathe fumes/mist/spray/vapour.  
**P262:** Do not get in eyes, on skin, or on clothing.  
**P270:** Do not eat, drink or smoke when using the product.  
**P272:** Contaminated work clothing should not be allowed out of the workplace.  
**P273:** Avoid release to the environment.  
**P280:** Wear protective gloves, protective clothing, eye protection.  
**P321:** Specific treatment (See First aid measures on this label)  
**P362+P364:** Take off contaminated clothing and wash it before reuse.  
**P405:** Store locked up.

**Hazard Symbol(s):**

F - Flammable  
T - Toxic  
Xn – dangerous to health  
Xi - Irritant  
N – dangerous for the environment

**R-phrase(s):**

**R23/25:** Toxic by inhalation and if swallowed.  
**R26/28:** Very toxic by inhalation and if swallowed.  
**R36/38:** Irritating to eyes and skin.  
**R43:** May cause sensitization by skin contact.  
**R50/53:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
**R65:** Harmful: May cause lung damage if swallowed.

**S-phrase(s):**

**S1/2:** Keep locked up and out of the reach of children.  
**S13:** Keep away from food, drink and animal foodstuffs  
**S28:** After contact with skin, wash immediately with plenty of water.  
**S38:** In case of insufficient ventilation, wear suitable respiratory equipment.  
**S36/37/39:** wear suitable protective clothing, gloves and eye/face protection.  
**S45:** in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)  
**S60:** This material and its container must be disposed of as hazardous waste.  
**S61:** Avoid release to the environment. Refer to special instructions/ Safety data sheets.  
**S63:** In case of accident by inhalation: remove casualty to fresh air and keep at rest.

**3) COMPOSITION / INFORMATION ON INGREDIENTS:**

Mixture :

Chemical name	Composition (g/L)	CAS No.	EC No.	CLP Classification
Carbosulfan	480	55285-14-8	259-565-9	Acute Tox. 3, H301 Skin Sens. 1, H317 Acute Tox. 2, H330 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Phenylsulphonate	4.8%	68953-96-8	273-234-6	Acute Tox 4 (H312) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Chronic 2 (H411) Flam. Liq. 3 (H226) STOT SE 3 (H335) STOT SE 3 (H336)
Solvesso 150	39%	64742-94-5	265-198-5	Asp. Tox 1 (H304)

4) FIRST AID MEASURES	
<b>Description of First-Aid Measures:</b> <b>Eye contact:</b>  <b>Skin contact:</b>  <b>Ingestion</b>  <b>Inhalation:</b>   <b>Most important symptoms and effects, acute and delayed:</b>  <b>Indication of immediate medical attention and special treatment needed: Advice to physician</b>	Health effects: eyes: Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. <b>Seek medical assistance immediately.</b>  Immediately wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. The component carbosulfan can be absorbed through the skin with resultant toxic effects. If poisoned by skin absorption administer atropine 2 – 4 mg intravenously every 10 minutes until atropinisation occurs. <b>Seek medical assistance immediately.</b>  Rinse mouth with water. If swallowed give one atropine tablet every 5 minutes until dryness of the mouth occurs. Never give anything by mouth to an unconscious patient. <b>Seek medical assistance immediately.</b>  Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. If poisoned by absorption through lungs administer atropine 2 – 4 mg intravenously every 10 minutes until atropinisation occurs. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If breathing is laboured and patient appears cyanotic (blue), ensure airways are clear and have a qualified person give oxygen through a face mask. If breathing has stopped apply artificial respiration at once. In the event of cardiac arrest, apply external cardiac massage. <b>Seek medical assistance immediately.</b>  None known.  Further medical treatment: If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital, or the nearest Poison Center.

5) FIRE-FIGHTING MEASURES	
<b>Suitable extinguishing media:</b>  <b>Unsuitable extinguishing media:</b>  <b>Special hazards arising from the substance or mixture:</b>  <b>Fire Fighting:</b>     <b>Protective clothing:</b>	Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide,dry chemical powder).  Water jet, due to contamination risk.  Generating poisonous and corrosive fumes such as carbon oxides, nitrous gases and hydrogen chloride. Keep upwind.  Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. If area is heavily exposed to fire and conditions permit, let fire burn itself out. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Do not scatter the material. Avoid pollution of waterways.  Full protective clothing and positive-pressure self-contained breathing apparatus

6) ACCIDENTAL RELEASE MEASURES											
<b>Personal precautions, protective equipment and emergency procedures:</b>		Wear personal protective clothing according to operator safety during removal of spillage. Wear eye protection, chemically resistant gloves, boots and protective overalls. In case of insufficient ventilation wear suitable respiratory equipment. Do not eat, drink or smoke whilst using or mixing the product. For personal protection see Section 8.									
<b>Environmental precautions:</b>		Do not contaminate waterways, drains and groundwater. If contamination of waterways, drains, rivers or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately.									
<b>Methods and material for containment and cleaning up:</b>		LARGE SPILLS: Shut off all possible sources of ignition. Avoid accidents, clean up immediately. Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contamination and inhalation of vapour. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand, or other inert material). Collect and seal in properly labelled drums for disposal. To clean spill area, tools, and equipment, wash with a solution of soap, water and acetic acid. Follow this with a neutralization step of washing the area with a bleach or caustic soda ash solution. Finally wash with a strong soap and water solution. Absorb any excess solution with the use of an absorbent and add both solutions to the drums of waste already collected. If contamination of crops or waterways has occurred advise emergency services or State Department of Agriculture. SMALL SPILLS: Wear protective equipment to prevent skin and eye contamination and inhalation of vapour. Contain-prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal. Wash area down with detergent and excess water.									
7) HANDLING & STORAGE											
<b>Precautions for Safe Handling:</b>		Do not breathe vapour or mist. Do not get in eyes, on skin or on clothing. Observe all warnings and precautions listed for the product. Do not contaminate water, fertilizer, food or feed in storage.									
<b>Conditions for Safe Storage, including any incompatibilities:</b>		Keep in tightly closed container in a shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Protect against physical damage. Packaging: Packed in 1 kg aluminum bags with inner liner and labelled according to relatively regulations									
8) EXPOSURE CONTROL / PERSONAL PROTECTION											
<b>Appropriate Engineering Controls:</b>		It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations. In general, dilution ventilation is a satisfactory health hazard control for this substance.									
<b>Control Parameters: Occupational exposure limits:</b>		<table><tr><td>mars</td><td>CAS#</td><td>Limit</td><td>Basis</td></tr><tr><td>Carbosulfan</td><td>55285-14-8</td><td>0.1 mg/m<sup>3</sup></td><td>TWA, inhalable fraction and vapour BEI</td></tr></table>		mars	CAS#	Limit	Basis	Carbosulfan	55285-14-8	0.1 mg/m <sup>3</sup>	TWA, inhalable fraction and vapour BEI
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Carbosulfan	55285-14-8	0.1 mg/m <sup>3</sup>	TWA, inhalable fraction and vapour BEI								
<b><u>PERSONAL PROTECTIVE EQUIPMENT:</u></b>		Consult supplier to confirm that the equipment is suitable.									
<b>Clothing:</b>		Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this substance. Wear chemically resistant boots and coveralls.									

<b>Gloves:</b>	Employee must wear appropriate chemical-resistant gloves to prevent contact with this substance.
<b>Eye protection:</b>	Use chemical safety goggles and/or full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.
<b>Respiratory protection</b>	Wear suitable respiratory equipment, especially during spraying, such as a face mask
<b>Emergency eye wash:</b>	Where there is any possibility that an employee may be exposed to this substance, the employer should provide an eye wash fountain and quick-drench facilities or appropriate alternative within the immediate work area for emergency use.
<b>9) PHYSICAL &amp; CHEMICAL PROPERTIES</b>	
<b>Form:</b>	Amber Liquid
<b>Odour:</b>	Aromatic hydrocarbon odour
<b>Odour threshold:</b>	Not determined
<b>Solubility:</b>	Emulsifiable in water.
<b>pH:</b>	6.5
<b>Melting point / Freezing point:</b>	No data available
<b>Initial boiling point and boiling range:</b>	> 120°C.
<b>Flash point:</b>	>23 C (close cup).
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid, gas)</b>	Combustible liquid.
<b>Upper/ lower flammability or explosive limits:</b>	No data available
<b>Vapour pressure:</b>	No data available
<b>Vapour density:</b>	No data available
<b>Relative density:</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition Temperature:</b>	No data available
<b>Viscosity:</b>	Combustible liquid.
<b>10) STABILITY &amp; REACTIVITY</b>	
<b>Reactivity:</b>	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.  High temperatures of fire may produce irritating gases & vapors. Avoid extreme heat and cold. Keep out of reach of children.  Strong basic, acidic or oxidizing materials.  None known.
<b>Chemical Stability:</b>	
<b>Possibility of hazardous reactions:</b>	
<b>Conditions to avoid:</b>	
<b>Incompatible materials:</b>	
<b>Hazardous decomposition product(s):</b>	
<b>11) TOXICOLOGICAL INFORMATION</b>	
<b>Acute Toxicity:</b>	LD50 >105 mg/kg, rat. LD50 > 2 000 mg/kg, rabbit LC50 1.08-1.78 mg/L/1 hour rat
<b>Oral:</b>	
<b>Dermal:</b>	
<b>Inhalation:</b>	
<b>Skin Corrosion/Irritation:</b>	Moderate irritant, rabbit.
<b>Serious Eye Damage/Irritation:</b>	Causes serious eye damage.
<b>Respiratory or Skin Sensitization:</b>	Skin sensitizer
<b>Germ Cell Mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	No data available
<b>Reproductive Toxicity:</b>	No data available
<b>STOT-SE:</b>	No data available
<b>STOT-RE:</b>	No data available
<b>Aspiration Hazard:</b>	May be fatal if swallowed and enters airways.
<b>12) ECOLOGICAL INFORMATION</b>	
<b>Ecotoxicity:</b>	Acute oral LD50 for mallard ducks 10, quail 82 and
<b>Birds:</b>	

<b>Fish:</b> <b>Daphnia:</b> <b>Algae:</b> <b>Worms:</b> <b>Bees:</b>  <b>Other:</b>	pheasants 20 mg/kg. LC50 (96 h) for bluegill sunfish 0.015 and trout 0.042 mg/L. LC50 (48 h) 1.5 µg/L. EC50 (96 h) 20 mg/L. Not toxic. Toxic; LD50 (24 h, oral) 1.046 µg/bee, (24 h, contact) 0.28 µg/bee. Potentially harmful.
<b>Persistence and Degradability:</b>	Carbosulfan is rapidly degraded in neutral soil (half-life > 5 days) with the degradation rate increasing as pH decreases. A major breakdown product is carbofuran which degrades more slowly (half-life approximately 30 days).
<b>Bio-accumulative Potential:</b>	Product does not bioaccumulate.
<b>Mobility in Soil:</b>	Carbosulfan and its major breakdown products are unlikely to leach to groundwater under field conditions.
<b>13) DISPOSAL CONSIDERATIONS</b>	
<b>Waste Disposal:</b>	<p><b>LARGE SPILLS:</b> Shut off all possible sources of ignition. Avoid accidents, clean up immediately. Clear area of all unprotected personnel. Wear protective equipment to prevent skin and eye contamination and inhalation of vapour. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand, or other inert material). Collect and seal in properly labelled drums for disposal. To clean spill area, tools and equipment, wash with a solution of soap, water and acetic acid. Follow this with a neutralisation step of washing the area with a bleach or caustic soda ash solution. Finally wash with a strong soap and water solution. Absorb any excess solution with the use of an absorbent, and add both solutions to the drums of waste already collected.</p> <p>If contamination of crops or waterways has occurred advise emergency services or Department of Agriculture. <b>SMALL SPILLS:</b> Wear protective equipment to prevent skin and eye contamination and inhalation of vapour. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal. Wash area down with detergent and excess water.</p> <p>In accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.</p>
<b>Container Disposal:</b>	Refer to the product label for instructions. Container Refilling and Disposal: If the container is to be refilled, do not rinse with any material, or introduce any pesticide other than this product. <b>DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE</b> , perforate and flatten. Do not transport if this container is damaged or leaking.
<b>14) TRANSPORTATION INFORMATION</b>	
<b>Road Transport ADR / IRD:</b>	UN NUMBER: 2991 UN Proper Shipping name: Carbamate pesticide, liquid, toxic, flammable, flashpoint not less than 23 °C (Contains Carbosulfan) Transport Hazard Class: 6.1 Packaging group: II Labelling no: 6.1 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.  <b>Segregation dangerous goods:</b> Not to be loaded with explosives (Class 1), nitromethane, food and food packaging in any quantity, however exemptions may apply. Also note that fire risk substances including dangerous goods of Class 6 or Class 9 which are fire risk substances are incompatible with dangerous goods of Class 1, Class 5.1 and Class 5.2.

<b>Maritime Transport IMDG / IMO:</b>	UN NUMBER: 2991 UN Proper Shipping name: Carbamate pesticide, liquid, toxic, flammable, flashpoint not less than 23 °C (Contains Carbosulfan) Transport Hazard Class: 6.1 Packaging group: II Labelling no: 6.1 Environmental Hazards: Marine pollutant Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling. 
<b>Air Transport ICAO / IATA:</b>	UN NUMBER: 2991 UN Proper Shipping name: Carbamate pesticide, liquid, toxic, flammable, flashpoint not less than 23 °C (Contains Carbosulfan) Transport Hazard Class: 6.1 Packaging group: II Labelling no: 6.1 Environmental Hazards: Not applicable Special Precautions for User: Read safety instructions, SDS and emergency procedures before handling.
<b>Transport in Bulk (according to Annex II of MARPOL 73/78 and the IBC Code):</b>	Not applicable
<b>15) REGULATORY INFORMATION</b>	
<b>Safety, health and environmental regulations/legislation specific for the substance/mixture:</b>	For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)
<b>Chemical Safety Assessment:</b>	Advice on product handling can be found in sections 7 and 8 of this safety data sheet.
<b>16) OTHER INFORMATION</b>	
<p>All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.</p> <p>It is the responsibility of persons in receipt of this SDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with this product. If the recipient subsequently produces formulation(s) containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this SDS to their own SDS.</p> <p>The information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. A properly trained person using this product intends this document only as a guide to the appropriate handling of the material. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.</p> <p>MERIDIAN AGRITECH MAKES NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSES OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANT ABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MERIDIAN AGRITECH (PTY) LTD WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.</p> <p>Date of issue: 23/08/2008  Date Revised: 06/01/2021</p> <p><b>Abbreviations and acronyms:</b></p> <ol style="list-style-type: none"> <li>1. CAS number: Chemical Abstracts Service number.</li> <li>2. CLP: Classification, Labelling, Packaging.</li> <li>3. LD<sub>50</sub>: Lethal Dose for 50% of the test population.</li> <li>4. LC<sub>50</sub>: Lethal Concentration for 50% of the test population.</li> <li>5. DT<sub>50</sub>: Half-life.</li> <li>6. GHS: Globally Harmonised System (of Classification and Labelling of Chemicals).</li> <li>7. STOT: Specific Target Organ Toxicity</li> <li>8. SE: Single exposure</li> <li>9. RE: Repeated exposure</li> <li>10. TWA: Time-weighted average</li> <li>11. BEI: Biological Exposure Index</li> </ol> <p><b>Literature References:</b></p> <ul style="list-style-type: none"> <li>• GHS: <a href="http://www.ccohs.ca/oshanswers/chemicals/ghs.html">www.ccohs.ca/oshanswers/chemicals/ghs.html</a></li> <li>• ECHA: <a href="https://echa.europa.eu/search-chemicals">https://echa.europa.eu/search-chemicals</a></li> </ul>	

